UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 28, 2010

MEMORANDUM

SUBJECT: Review of the draft Whatcom Conservation District Manure ARM QAPP

FROM: Jennifer Crawford, Chemist
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TO: Jill Gable, Project Officer
Office of Water and Watersheds, US EPA R10

CC: Ginna Grepo-Grove, USEPA R10 QA Manager

This review was completed for the Whatcom Conservation District Manure ARM QAPP: "Protecting Puget Sound Watersheds from Agricultural Pollution Using a Progressive Manure Application Risk Management (ARM) System." The following comments are provided for clarification and inclusion in the final QAPP.

1) The QAPP DQOs (section 7) need to address lab and field collection/analysis as well as the statistical criteria. This information could be added in the text for each relevant section (precision, accuracy, etc) or in a table. This needs to include required acceptance criteria and frequency for field and lab QC measurements. Table 7.2 addresses the field measurement criteria and capabilities, and you need to include similar information for the lab analyses. What QC analyses will be conducted in the field (other than calibration) – duplicates/blanks? What QC is the lab required to perform – matrix spikes, blanks, duplicates, etc. At what frequency will field QC samples be collected and lab QC be conducted?

2) Table 7.1 needs to include a reference to the actual method which will be followed for each laboratory analysis. This is very important for project reproducibility and data use in the future. Will any other QC be performed besides duplication? (Only percent difference is cited.) Blanks and matrix spikes should also be analyzed and are required by EPA approved methods.

3) Table 6.1 and 7.1 list "Total N (TKN)". Please note that TKN and total nitrogen parameters are not the same thing. Total Kjeldahl Nitrogen (TKN) analysis only measures the organic nitrogen present in the sample – both ammonia/ammonium and other organic nitrogen forms. A reference to total nitrogen would include both inorganic and organic forms of nitrogen.

4) Preservation and holding time requirements for all samples (both field and lab analysis) need to be included within the document.

5) Please include information regarding the review and validation of subcontracted laboratory data. How will the data be imported into the database – by hand or by uploading an EDD?

6) Table 7.1 – The column labeled "QC Sample to Assess Error for Sampling (S), Analytical (A) or both (S&A)" is a little misleading. Split samples, replicates, matrix spikes, and field blanks are not assessing error – they are assessing uncertainty. The RPD and % recoveries reflect a range of uncertainty issues: sample heterogeneity, field collection techniques, lab performance and lab replication. Duplicates would always assess both sampling and analytical uncertainty – in addition to inherent sample matrix issues.

If you have any questions, please contact me at Crawford.Jennifer@epa.gov or (206) 553-6261.